REMARKS

Entry of the foregoing, reexamination and reconsideration of the subject application are respectfully requested in light of the amendments above and the comments which follow.

As correctly noted in the Office Action Summary, claims 19-40 and 43 were pending. By the present response, claims 19 and 22 have been amended, claims 20 and 21 have been canceled, and claim 44 has been added Thus, upon entry of the present response, claims 19, 22-40, 43 and 44 are pending and await further consideration on the merits.

Support for the foregoing amendments can be found, for example, in at least the following locations in the original disclosure: page 8, lines 5-6 and 18-22; and the original claims.

CLAIM REJECTIONS UNDER 35 U.S.C. §102

Claims 19-21, 23-25, 27-40 and 42 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,102,846 to Bentley et al. (hereafter "*Bentley et al.*") on the grounds set forth on page 2 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

The present invention is directed to a process for preparing polyamide particles which advantageously benefits from the use of mild temperatures, thereby making it possible to avoid potential degradation of the polyamide material, and also makes it possible to obtain substantially spherical particles having a satisfactory size distribution.

A process performed according to the principles of the present invention is set forth in amended claim 19. Amended claim 19 recites:

> *19. A process for preparing spherical polyamide particles having a mean diameter of less than 1 mm, comprising the following steps:*
> *a) preparing a dispersion of a first liquid which comprises a solution of polyamide monomers in a solvent, in a second inert liquid thereby forming a reaction medium, the reaction medium comprising two phases, a continuous phase formed by the second liquid, and a dispersed phase formed by the first liquid, the first and second liquids are essentially immiscible;*
> *b) polymerizing the monomers by polycondensation and/or polyaddition by heating the reaction medium and maintaining the heating at a temperature below the melting point of the polyamide with the desired degree of polymerization;*
> *c) optionally, decompressing the reaction medium to atmospheric pressure;*
> *d) optionally, gradually cooling the reaction medium; and*
> *e) recovering the spherical polyamide particles therefrom.*

Bentley et al. fails to anticipate the process of amended claim 19.

As evident from the above, claim 19 is directed to a process for preparing spherical polyamide particles including preparing a dispersion of a first liquid in a second liquid, wherein the first liquid comprises a solution of polyamide monomers in a solvent. *Bentley et al.* clearly fails to disclose at least this aspect of the presently claimed invention.

In addition, *Bentley et al.* is directed to stable dispersions of polymer particles containing sub-particles of a solid modifying agent and processes related thereto:

> The basis of the process of the invention is the initial procurement of a stable dispersion of the insoluble solid monomer or monomers and the modifier and finely divided, particular form, and the maintaining of this stably dispersed state throughout the subsequent polymerization reaction. (Emphasis added; column 5, lines 35-40)

Claim 19 requires, *inter alia,* "preparing a dispersion of a first liquid comprising monomers in a second inert liquid.

By contrast, *Bentley et al.* fails to disclose preparing such a dispersion. The polymer materials described in association with Example 1 are copolymers and therefore fail to satisfy at least this aspect of claim 19.

Bentley et al. fails to clearly disclose that the dispersion of a first liquid and second liquid is ever formed. In particular, with respect to Example 1, the only apparent dispersion appears to be solid particles within a liquid phase. This dispersion fails to satisfy the requirements of claim 19. Furthermore, claim 19 requires polymerization of the reaction medium formed by the dispersion of the first liquid and the second liquid. By contrast, *Bentley et al.* clearly fails to disclose such a polymerization step. In Example 1 of *Bentley et al.*, aliphatic hydrocarbon, polyamide monomers and a copolymer dispersant are blended, then additional dispersant and aliphatic hydrocarbon are added again, and finally polymerization occurs. Since the dispersing agent is soluble in the inert organic liquid (as mentioned in col. 1, lines 67-68 of *Bentley et al.*), any first and second liquid, as defined in claim 19, cannot be considered as immiscible according to the teachings of *Bentley et al.* By contrast, as evident from amended claim 19 above, the presently claimed invention requires polymerization of polyamide in a first and second phase system comprising a dispersed phase of a first liquid comprising polyamide monomers into a continuous phase of a second inert liquid, with the first and second liquids being essentially immiscible.

Thus, for at least the reasons noted above, *Bentley et al.* clearly fails to anticipate the process as set forth in amended claim 19. The remaining claims

depend either directly or indirectly upon claim 19. Thus, these claims are also distinguishable over *Bentley et al.* for at least the same reasons noted above.

CLAIM REJECTIONS UNDER 35 U.S.C. §103

Claims 19-21, 23-25 and 27-40 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,127,513 to Ohara et al. (hereafter "*Ohara et al.*") on the grounds set forth on page 4 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

As evident from the above, claim 19 is directed to a process for preparing spherical polyamide particles including preparing a dispersion of a first liquid in a second liquid, wherein the first liquid comprises a solution of polyamide monomers in a solvent. *Ohara et al.* clearly fails to disclose, or suggest, at least this aspect of the presently claimed invention.

Claim 19 also requires the step of heating the dispersion of first and second liquids at a temperature below the melting point of the polyamide. By contrast, *Ohara et al.* teaches polymerization through heating at a temperature which is "higher than the melting points of the monomer and the formed polyamide" (emphasis added; column 2, lines 6-8). Thus, *Ohara et al.* not only fails to disclose or suggest at least this aspect of the present invention, in fact teaches away from it.

Thus, for at least the reasons noted above, *Ohara et al.* fails to disclose, or even suggest, the process set forth in amended claim 19, or any claim depending therefrom.

Claims 22, 26 and 32-34 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Bentley et al.* in view of U.S. Patent No. 3,446,782 to Okazaki et al. (hereafter "*Okazaki et al.*") on the grounds set forth on page 5 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

It is alleged on page 6 of the Official Action that it would have been obvious in view of *Okazaki et al.* to "use water in Bentley's process." However, an objective application of the teachings of *Okazaki et al.* as a whole does not lead one of ordinary skill in the art to the process recited in claim 19.

Okazaki et al. teaches:

> The essential feature of this invention resides in the use of an aqueous solution of lactam without any aromatic ring as a solvent for the said synthetic linear polyamide. In other words, this invention is based on the discovery that when such aqueous lactam solution is used as a dispersion medium, degradation and coloration of a synthetic linear polyamide material do not occur . . . (emphasis added; column 2, lines 30-36).

Thus, as evident from the above, it is essential according to the teachings of *Okazaki et al.* for the aqueous lactam solution to form a continuous phase in order to provide the necessary solvent functionality. By contrast, claim 19 requires the formation of the dispersion wherein the first liquid comprising a solution of polyamide monomers in a solvent forms a dispersed phase within the second liquid. Therefore, *Okazaki et al.* teaches away from at least this aspect of claim 19.

Moreover, one of ordinary skill in the art would never have turned to the teachings of *Okazaki et al.* in the first place in order to modify the process of *Bentley et al.* This is because the two references utilize entirely different mechanisms for forming polyamide particles. The mechanism utilized by *Bentley et al.* involves polymerization of monomers. By contrast, the mechanism utilized by *Okazaki et al.*

is dissolution of an already-polymerized polyamide material. As evident from the above-quoted passage, *Okazaki et al.* only teaches that the solution of lactam with water is beneficial for dissolving an already-polymerized polyamide material. Since *Bentley et al.* does not rely on this type of mechanism for formation of polyamide particles, one of ordinary skill in the art would not have any reason whatsoever for incorporating the lactam and water solution taught by *Okazaki et al.* therein.

Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 19-22, 25-27, 31, 35-40 and 43 stand rejected under 35 U.S.C. §103(a) as being unpatentable over WO 01/68235 to Montasser (cited as equivalent U.S. Patent Application Publication No. 2003/0059473 to Montasser) (hereafter "*Montasser*") on the grounds set forth on page 6 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

As evident from the above, claim 19 requires the step of preparing a dispersion of the first liquid in a second inert liquid, wherein the first liquid forms a first dispersed phase, and the second liquid forms a continuous phase, and that "the first and second liquids are essentially immiscible."

In complete contradiction to this requirement, *Montasser* teaches the formation of a polymer by combining first and second liquids, wherein "the first phase being miscible in all proportions with the non-solvent or non-solvent mixture of the second phase (emphasis added; paragraph [0011]).

Thus, not only does *Montasser* fail to disclose, or even suggest, the process recited in amended claim 19, it in fact teaches away from it, as well as any claim depending therefrom. Reconsideration and withdrawal of the rejection is respectfully requested.

CONCLUSION

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

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